



Uniformed Services University of the Health Sciences 2010 Report

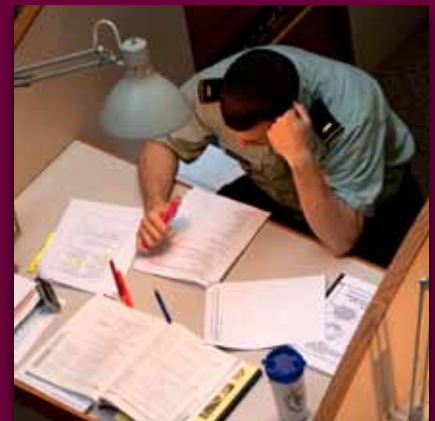
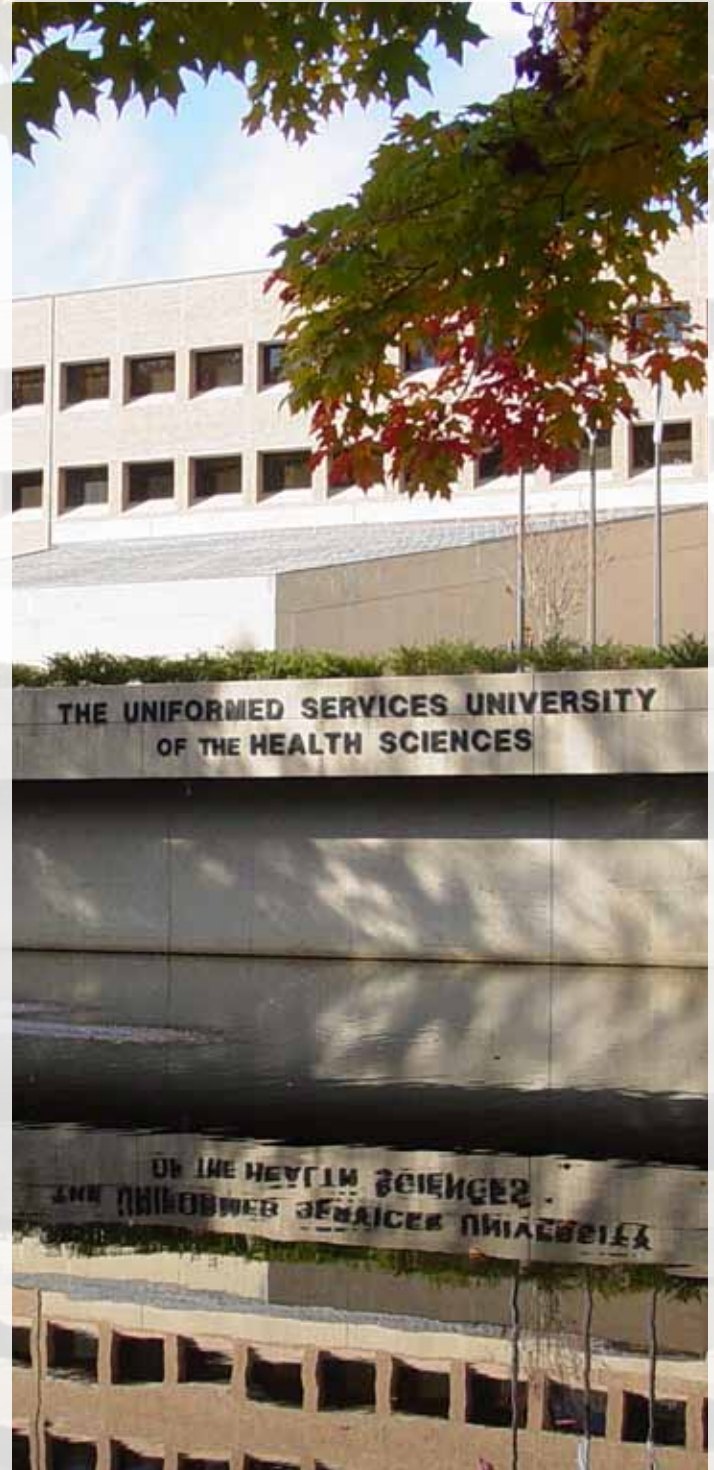


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President's Letter

Students at the Uniformed Services University of the Health Sciences (USU) are pursuing a mission greater than medicine alone. They are learning the art of healing in uniformed service. Innovation in scholarship is needed to educate these officers for responsibilities that reach far beyond the conventional roles of medicine.

USU is a place where students gain the knowledge to practice medicine anywhere in the world, the skills to treat some of the most extreme physical and mental wounds, and the confidence to be a leader under the most extraordinary conditions.

More than just “medicine as usual,” our University blends old traditions with new methods to cultivate the sophisticated doctors, dentists, nurses and scientists needed in military medicine. These professionals carry out the University hallmark of caring for those in harm’s way at duty stations on the front lines, on the home front and in nearly every other place around the world.

This lofty charge has guided the University from its very beginning nearly four decades ago and remains at the forefront of every University pursuit, even as work to improve how we care for our wounded servicemembers is under way.

To best serve the fighting force, the University is finding creative ways to mobilize education, research and patient care every day. Today’s efforts focus on psychological and behavioral health initiatives. The breadth and depth of these pursuits are far-reaching because USU is committed to advancing the kind of science that improves the human condition—body and mind.

And this work has never been more important than it is right now.

Rising numbers of servicemembers are suffering the debilitating effects of trauma, and healing these wounds is a top priority for USU and the Department of Defense at large.

The University is taking comprehensive steps toward finding better solutions for the identification, treatment and prevention of emotional wounds. On campus, students in every program are being taught contemporary ways of advancing modern medicine, and they are practicing these methods at treatment facilities around the world.

At our research centers, investigators are exploring ways to combat injuries, such as posttraumatic stress disorder, traumatic brain injury, depression, stress and many others. The multidisciplinary teams are examining these disorders from every angle, and they are finding cutting-edge solutions to begin healing these complex injuries.

In the military culture, our University leadership is finding ways to reduce the stigma of reporting psychological problems, and is working to increase the accessibility of quality care.

Through all of this important work, USU is joining the rest of the military in its march toward mental well-being. This report highlights some of the most significant advances, along with the dynamic people and programs that make USU a special place.



A handwritten signature in black ink that reads "Charles L. Rice". The signature is fluid and cursive, with a large, sweeping initial "C".

Charles L. Rice, M.D.

The USU Story

Thousands are drawn to the Uniformed Services University of the Health Sciences (USU) each year. Educators, students and researchers alike are inspired by the University's mission of learning to care for those in harm's way.

And the University reaches out to the world. Its graduates have carried out important duties in treatment facilities at home and on the front lines, in major foreign cities, and in developing countries—wherever duty calls.

The University was the brainchild of Rep. F. Edward Hébert, who proposed the establishment of a "West Point for military medicine" early in his career. He wanted to build an institution where students could learn to practice extraordinary medicine under difficult circumstances and heal wounds largely unseen in civilian practice. His dream became a reality years later when President Richard Nixon signed a bill chartering USU in 1972.

After laying the foundation for this new way of educating uniformed physicians, the Louisiana Democrat said, "When my service ends and I look back over the milestones of my career, I want most of all to be remembered for the military medical school."

The Hébert idea took form in the rented space above a Peoples Drugstore and a branch of the State National Bank in Bethesda, Md. In these modest quarters, University pioneers established a framework of academic rigor and unique learning opportunities that became a USU tradition. This model of scholarship guided the University, even as its scope and mission broadened over time.

In the early days, one of the first orders of business for University leaders was finding a permanent home for the campus community. The original Board of Regents chose a parcel of land on the grounds of the National Naval Medical Center, across the street from the National Institutes of Health. This central location, in the middle of a vibrant scientific community, gave faculty and students unparalleled opportunities to collaborate with leading scientists. These partnerships deepened USU's already significant research footprint, and they continue to shape modern medicine today.

The inclusion of a Graduate School of Nursing in 1993 was another milestone for the University. Policymakers expanded USU's reach because they understood the important role military nurses play in uniformed health care.

The founding dean and nurse pathfinder, Faye Abdellah, Ed.D., best summed up the need for this addition. "Civilian colleges of nursing can prepare nurses for the military, but they cannot prepare military nurses," she said.

The Department of Defense was left with a dwindling medical corps when the physician draft and Berry Plan ended. Policymakers had to find alternative ways to care for servicemembers and their families.



Rep. F. Edward Hébert introduced the idea of a "West Point for military medicine" as a way to maintain all-volunteer uniformed services. At this University, government employees would provide the unique education needed to care for injured troops.

The Uniformed Services University of the Health Sciences was chartered by an act of Congress and signed into law by President Richard Nixon in 1972.



The University's first administration and faculty began laying the groundwork to prepare students for the challenges of military medicine in the rented space above a Peoples Drugstore and a branch of the State National Bank, as well as in other temporary locations.



In less than two decades, USU has graduated more than 470 advanced practice nurses ready for duty anywhere American troops go. These professionals take on a variety of leadership roles in the military and public health systems.

Army Lieutenant Colonel Sandra McNaughton ('00) is one example of the school's outstanding alumni. The family nurse practitioner was among a select group of female medical professionals forming a Special Forces team in Afghanistan. These nurses and medics cared for local women and children at forward operating bases, often under very difficult conditions.

"This experience validated the long hours of training family nurse practitioners receive," McNaughton said. "At the same time, it profoundly affected my view of the world and the military."

From the beginning, signature curricula have been used in both the medical and graduate nursing schools to broadly educate students for the challenges of military medicine. Over the years, programs have been added—and trademark exercises have been expanded—to encourage an even more dynamic learning environment.

Today, students travel far beyond the University's corridors to gain the knowledge and skills to

practice medicine around the world. Coursework such as clinical rotations at prominent treatment facilities gives students opportunities to experience the responsibilities that lay ahead.

A medical student, Air Force Second Lieutenant Eric Meyer, for example, completed part of his training in the Surgical Intensive Care Unit at Landstuhl Regional Medical Center in Germany. While there, he was able to put a face to the medicine learned on campus grounds. Meyer spent four weeks caring for badly injured soldiers returning from Iraq and Afghanistan.

"Servicemembers are people with ambition and a lot of motivation," he said. "When you see them get injured, you want to do everything you can to heal them and get them back on track."

This meaningful interaction and others like it are trademark USU experiences. No other American university is so keenly focused on providing the education needed to care for uniformed personnel.

The University's rigorous education and one-of-a-kind experience prepare graduates to triage and treat the most devastating wounds of modern battle, perform breakthrough scientific research and lead amid challenging conditions of war and humanitarian crisis.

The original Board of Regents found a permanent home for the University on the grounds of the National Naval Medical Center, near Washington, D.C., and across the street from the National Institutes of Health.



USU's charter class graduated in 1980. These 29 officers were the first to receive the school's unique education and blazed a trail for thousands to follow.

The University expanded significantly in 1993 with the addition of a Graduate School of Nursing. "Civilian colleges of nursing can prepare nurses for the military, but they cannot prepare military nurses," said founding dean Faye Abdellah, Ed.D.



The Graduate Nursing School is a leader among peers. The school's distinguished alumni, such as Army Lieutenant Colonel Sandra McNaughton ('00), carry out important duties across the globe. McNaughton demonstrated strong professional knowledge at various forward operating bases while providing care in Afghanistan in 2008.

A vision of excellence in military medicine guides the University, where students learn innovative lessons that provide the foundation for caring for those in uniformed service.



School of Medicine

The call to service and pursuit of medicine are joined at the F. Edward Hébert School of Medicine, where students work to become both physicians and officers in the Army, Navy, Air Force and Public Health Service.

Educating students for these dual roles is achieved through unique measures. Students are held to high standards of medical scholarship, and they are taught leadership skills in the military training exercises melded into the curriculum. This formula produces sophisticated doctors who are ready to perform under difficult circumstances anywhere in the world.

Students attend school year-round in order to meet program benchmarks. This schedule includes 500 extra hours of education emphasizing trauma and emergency medicine, infectious diseases and parasitology, the humanities and behavioral sciences, and the principles of leadership and teamwork.

This foundation prepares graduates for the challenges of military medicine—whether they are caring for physical or emotional wounds, or practicing in treatment facilities in the United States or abroad.

The program also builds the sustaining military medical corps needed for a healthy force. The University has more than 4,700 School of Medicine alumni. These officers comprise nearly one-quarter of all active-duty military physicians.

The roles that graduates take on personify the importance of the USU mission. Policymakers, groundbreaking researchers and senior leaders are among the prestigious alumni shaping world health.

Inspiring Heritage

University students pursue a deeper understanding of military medicine across time by recalling the experiences of servicemembers past. History lessons are an integral part of the School of Medicine curriculum, bringing to life the stories of battlefield medicine and educating students about their medical heritage.

Faculty members in the Department of Medical History take on this innovative teaching. Through words and vivid wartime iconography, lecturers describe accounts of triumph and struggle in uniformed health care. They also provide some insight about the social conditions shaping medicine.

“There are many surrounding factors reaching beyond the physician and patient, and these conditions are always in the process of change,” said Senior Vice President and Department of Medical History Professor Dale Smith, Ph.D. “History is the study of how this change happens.”

This knowledge cultivates better uniformed physicians, who examine the present-day challenges of military medicine by interpreting events of the past.

“Understanding history does not allow us to predict the future,” Smith said. “But it does keep us from being surprised.”

Smith and his mentor, Robert Joy, M.D., are pioneers of this modern teaching method. Few medical schools have history departments, and USU’s is the nation’s only history department with a military-centric focus.

Joy became interested in military history early in his career. “It dawned on me that in the medical

history literature, there was very little military medicine history,” he said. “It was blindingly obvious, and it had been for years, that in the military history literature, there was almost no military medical history.”

He began compiling the literature that would bridge this knowledge gap. Joy published papers and became renowned for this new genre of storytelling.

Joy recruited Smith soon after being appointed professor and chairman of the Department of Medical History. Together, they constructed a curriculum designed to cover the complex experiences of uniformed health care providers.

Nearly 30 years have passed since Joy and Smith began forging this new path in military medical history. Their original curriculum remains an important component of the learning framework.

The topics cover the general development of patient care, disease and society, with specific lectures on the history of anatomy, physiology, microbiology, psychiatry and surgery. In order to graduate, medical students must complete 31 hours of history coursework from ancient medicine to the present.

For modern USU students, achieving in the present means illuminating the past.



Dale Smith, Ph.D., and Robert Joy, M.D., right, are recognized military medical historians. Based on the curriculum they developed for USU, Smith and Joy have spoken at universities and organizations around the world.



Army Second Lieutenant Victor Yu describes himself as “a lifelong learner.”

Call to Service

Diversity is a common thread woven into the School of Medicine fabric. Students come to the Maryland campus from across the United States and bring unique perspectives to the academic environment.

Some enter with no prior military experience while others, like Army Second Lieutenant Victor Yu, are veteran servicemembers. The University welcomes both types of learners, shaping each into skilled uniformed physicians.

Yu, a 1994 United States Military Academy graduate, had a variety of experiences before matriculating into the School of Medicine Class of 2010. He was a platoon leader and twice served as a company commander before returning to his alma mater as an advanced mechanical engineering assistant professor.

While at West Point, Yu adopted the philosophy of being a “lifelong learner.” His philosophy led him down a new path.

“I gravitated toward military medicine because I wanted to be challenged in my career,” Yu said. “I knew I wanted to give back to soldiers, so it was a natural progression to choose the Uniformed Services University.”

The future radiologist credits the “first-rate” USU military and civilian instructors with establishing a balanced academic foundation. The combination of military leadership training and didactic and clinical instruction allows graduates to perform both as officers and physicians.

“This school has a lot of additional requirements compared to other medical programs,” Yu said. “But these experiences prepare us to uphold the high standards of excellence in military medicine in ways other universities cannot.”

White House Doctor

Part of what makes University physicians special are the patients they serve. Uniformed doctors heal some of the world’s bravest and most distinguished men and women—the members and leaders of the U.S. military.

Retired Navy Rear Admiral Eleanor “Connie” Mariano (’81), one of USU’s earliest graduates, was among those entrusted to care for this important group. Throughout her career, she practiced the unique brand of medicine learned on campus grounds while caring for thousands of troops, from seamen to commanders in chief.

During her career, Mariano has experienced opportunities known to few. She treated servicemembers on land and sea, was a physician to three U.S. presidents and became the first female director of the White House Medical Unit.

Caring for the most powerful man in the world and the 1,000 additional people who travel through 1600 Pennsylvania Ave. every day was hard work, according to Mariano. The days are long, the training is intense and the working conditions are challenging.

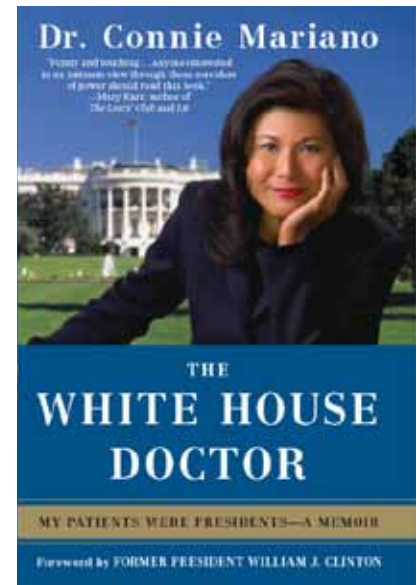
“White House medicine is a different kind of battlefield medicine,” she said. “But USU and my military career helped prepare me for it.”

The job, though challenging, gave Mariano the opportunity to meet the man behind the office.

“You can get pretty intimidated by his stature and celebrity,” she said. “But after seeing the president every day for years, you get to know him as a private individual. This is the special relationship a doctor earns with a patient.”

Mariano recounted many of her work experiences in a new book called “The White House Doctor: My Patients Were Presidents—A Memoir.”

“It is an American story of how I, as a Navy dependent of parents born in the Philippines, grew up in the United States, attended USU and went on to become the president’s doctor,” she said.



University alumna Connie Mariano, M.D. (’81), wrote about her experiences as the first female director of the White House Medical Unit in “The White House Doctor.”

Graduate Programs

The Graduate Programs in the biomedical sciences are important components of the School of Medicine architecture. The master and doctoral tracks of study educate students with diverse interests for a breadth of career options in academia, public health, industry and government.

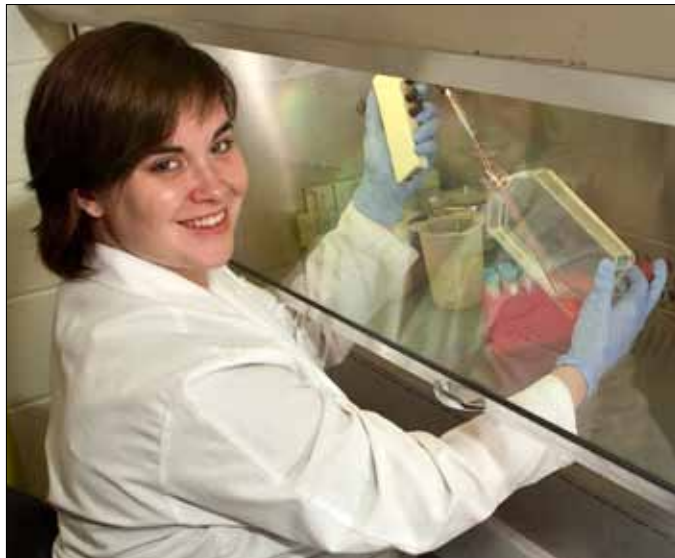
The University offers doctoral and master's degrees in 12 areas of concentration, ranging from emerging infectious diseases to preventive medicine and biometrics. Military and civilian students completing coursework in each of these disciplines are challenged to find innovative solutions to complex biological problems through dynamic scholarship and research.

This vibrant learning model has led to pioneering advances in areas such as cancer biology, cell-to-cell signaling and regulation of gene expression. These studies and other breakthrough research illuminate the quality of education that graduate students receive at USU.

Celebrating Excellence in Research

Each year during the spring semester, the Graduate Programs in the School of Medicine sponsor a research colloquium to showcase student scholarship and celebrate basic research with a lecture by a distinguished guest. These events give participants the opportunity to share their work in a supportive academic environment.

At the 2010 colloquium, several students presented their findings on research topics spanning the fields of biomedicine and behavioral health. These



Stephanie Petzing, a graduate student in the Emerging Infectious Diseases Graduate Program, is studying a wide range of viruses.



Jacqueline Surls is a student in USU's Molecular & Cell Biology Graduate Program.

oral presentations acted as sounding boards for intellectual exchange and illustrated the wide range of research graduate students are pursuing.

The series of student-facilitated discussions led to the John W. Bullard Lecture presented by Stefanie Vogel, Ph.D. The former USU faculty member and current University of Maryland School of Medicine professor described various aspects of macrophage activation and regulation.

"It was an honor to be invited back to USU and give the Bullard Lecture. The graduate programs have grown so much," she said. "Spending the day at USU provided the opportunity to catch up with old friends and colleagues, meet with a wonderful group of students, and listen to the exciting work being carried out by all who presented talks and posters."



Army Captain David Ross is studying the effects of deployment on intimate relationships.

Dynamic Student Research

Army Captain David Ross has been interested in the symbiotic relationship between the mind and body for years. His commission into the Army followed soon after receiving a degree in psychology and learning that the uniformed services needed mental health experts.

"I was a part of the ROTC while in college and I grew up in a family dedicated to public service," Ross said. "It was important for me to continue this family tradition, while still doing something I love."

The experienced officer came to the Bethesda campus with a broad range of skills. Early in his military career, he served as a clinic executive officer after deploying to Baghdad, Iraq. While in theater, Ross performed his duties as a medical platoon leader, running an aid station on the front lines.

"I saw how the stress of combat can affect people in negative ways," he said. "I knew it did not have to be this way."

A conviction to help those in need drives his current research efforts at USU. The Medical and Clinical Psychology student is studying the effects deployment has on intimate relationships.

"We are looking at how posttraumatic stress disorder impacts marital communication. Past research tends to dichotomize conversations into either good or bad categories," Ross said. "We are delving much deeper by looking at multiple types of marriage communication and coding each person's statement with more specific labels, such as acceptance, humor, hostility and withdrawal."

The goal of this investigation is to provide military medicine with a richer picture of the dynamics existing between posttraumatic stress disorder and communication. This knowledge could help therapists discover new ways to ease transitions from the battlefield to the home front.

"I want to help servicemembers," Ross said. "Being a part of this learning community is the ideal academic environment for someone like me."



Mentoring Future Researchers

The intellectual backbone of the University is its faculty, who articulate the mission clearly and consistently. For USU graduate students, faculty members serve as role models who point the way to the graduates' own paths of scientific research.

Marian Tanofsky-Kraff, Ph.D., an assistant professor in the Department of Medical and Clinical Psychology, guides students by demonstrating exceptional ways to advance psychotherapy boundaries.

She is transforming current understanding about binge eating in adolescents by exploring a new phenomenon called loss-of-control eating. This experience is characterized by the inability to regulate how much food is consumed. Children with poor social interactions often rely on this type of eating as a coping mechanism. This behavior is linked to obesity and excessive weight gain in youth and adult populations.

Tanofsky-Kraff is using therapy to minimize the occurrence of loss-of-control eating behavior in adolescents. This intervention, which is leading to reduced episodes, is successfully preventing excess weight gain, according to findings of a recent pilot study published in the *International Journal of Eating Disorders*.

Her groundbreaking work is receiving wide acclaim within the medical community. Tanofsky-Kraff was awarded a \$1 million grant from the National Institute of Diabetes and Digestive and Kidney Diseases at the National Institutes of Health to continue these investigations on a larger scale.

This research is also making an impact closer to home. Tanofsky-Kraff's dedication has made her more than just a teacher. Many of her students consider her a mentor and a source of inspiration for their academic pursuits.

"She is very passionate about her work in the field of eating disorders and youth," said Liza Ranzenhofer, M.A., a third-year graduate student. "Her enthusiasm is not only visible, it is contagious."



The University and medical community have recognized Marian Tanofsky-Kraff, Ph.D., for her work regarding loss-of-control eating. She is the recipient of the 2010 Leonard Award for Excellence in Clinical Research.

Graduate School of Nursing

Uniformed nurses are called upon to care for the wounded, often under extraordinarily difficult circumstances. Because their charge reaches beyond the traditional nursing role, their body of knowledge and experience must also exceed the usual competencies.

The USU Graduate School of Nursing (GSN) cultivates innovative nurse scientists and advanced practice nurses. These professionals harness the lessons they learn on the USU campus to skillfully deliver health care in the Military Health System.

Faculty members use a signature curriculum when teaching students the fundamentals of advanced practice nursing in the military context. This learning framework encompasses operational readiness, clinical decision-making and nursing practice in the global environment. Mastering these tenets builds a sound knowledge base for USU graduates to practice their craft in a broad range of settings.

The GSN offers four programs for students pursuing a master's degree: Perioperative Clinical Nurse Specialist, Family Nurse Practitioner, Certified Registered Nurse Anesthetist and Psychiatric Mental Health Nurse Practitioner.

An experienced military and civilian faculty teach the program options. The Doctorate in Nursing Science Program, like the other tracks of study, blends clinical practice with original nursing research relevant to federal health systems.

All five GSN programs share the common goal of advancing professional nursing practice and military medicine by improving health care for servicemembers, their families and other beneficiaries.



Students in the Psychiatric Mental Health Nurse Practitioner Program confer about their classwork, which includes clinical practice, management, research and leadership.

Healing Body and Mind

The Graduate School of Nursing teaches students to care for more than just visible wounds. The Psychiatric Mental Health Nurse Practitioner program educates advanced practice nurses to recognize and treat psychological injuries.



Air Force First Lieutenant Glenn Armstrong completed several years of bedside nursing before enrolling in GSN's Psychiatric Mental Health Nurse Practitioner Program.

This newest option of study was created to address the health needs—body and mind—of servicemembers and their families. A faculty with experience in hospital and combat settings teach the multipronged curriculum. Furthermore, the content is continually evaluated to ensure the most effective methodologies are in place.

"Our program evolves to keep pace with changing scholarship and research," said program director Navy Lieutenant Commander Pamela Herbig. "We let the evidence practice guide instruction to build a maximally effective program."

Students receive training at top military treatment facilities and Veterans Administration hospitals across the country. Interacting with field experts and patients in clinical settings prepares students for the diverse roles they will take on after graduating from the program.

"I've completed two rotations at Walter Reed Army Medical Center," said Air Force First Lieutenant Glenn Armstrong, a mental health nursing student. "The opportunity to work with servicemembers returning from war has been incredible. For me, it solidified my decision to become a military nurse."

Completing student research is another important component of the GSN experience. Each program weaves research threads into the curriculum. Students in the program must pursue investigations relevant to their course of study. These investigations may span the behavioral health spectrum, from developing frameworks of care to discovering innovative treatment methods.

"I am looking at the gaps existing in the identification, intervention and prevention of alcohol dependency across all four services," Armstrong said. "Many servicemembers are battling substance abuse issues, especially those with deployment experience. Therefore, combating this disease is important work and one that requires immediate and sustained attention."

After completing all the benchmarks of the program, Armstrong will find himself among a select group of peers.

"Behavioral disorders are very serious wounds that can have devastating effects if left untreated," Herbig said. "The prevalence of these injuries demonstrates the critical need to keep mental health programs at the forefront of our mission."



Army Captain Laurie Kwolek savors the “insider perspective” she receives in her classes at USU.

Medicine With a Mission

Army Captain Laurie Kwolek, a GSN student, has experienced much diversity throughout her career in the uniformed services. A 21-year veteran, she enlisted shortly after graduating from high school. Kwolek carried out the responsibilities of a bedside nurse early in her military career. She went on to fill many additional duties before receiving an undergraduate degree in nursing and re-entering service as a commissioned officer.

This new leadership role strengthened Kwolek's dedication to military medicine and her commitment to education. She continued delivering health care around the world, this time as a medical-surgical nurse. It was during this time that Kwolek set her sights on receiving an advanced degree from USU.

“I applied to this University because I knew I would be able to connect with the faculty,” she said. “Many of them have experienced the same working conditions as me, and they are able to lend a unique insider's perspective on some of the challenges accompanying uniformed nursing.”

Kwolek has completed nearly half of the Family Nurse Practitioner Program requirements and is on course to graduate in 2011. She admits the curriculum is rigorous, but says the rewards of learning in a joint service environment are bountiful.

“The instructors do more than just teach students how to answer questions on a chalkboard,” Kwolek said. “They do a fantastic job of holistically educating us for a broad range of situations.”

Her ability to adapt to new environments was tested during a recent clinical rotation at the Quantico Marine Corps Base in Virginia. Kwolek gained insider knowledge about the Marine Corps' culture while treating injured candidates going through basic military training.

“This experience gave me a whole new appreciation for all of the services,” she said. “I was exposed to a new mind-set. You don't learn this kind of lesson from a book or in a classroom.”

Nursing Amid Chaos

Often USU alumni find themselves far removed from traditional hospital settings, providing care thousands of feet in the air or practicing miles from shore.

Air Force Lieutenant Colonel Kenneth Williams' ('99) challenge was delivering health care in a country devastated by a massive natural disaster. The Nurse Anesthesia Program alumnus was deployed to Haiti just days after a 7.0-magnitude earthquake struck the Caribbean nation, killing thousands and injuring many more.

“We arrived at our compound and found hundreds of people just waiting for medical care,” Williams said. “We used a small area to put up our tents, one for the operating room and one to sleep in.”

The already dire working conditions were complicated by the lack of available medical supplies. A plane carrying the medical team's equipment was diverted to Florida and grounded for two days.

They made progress despite the difficult circumstances.

“We completed five patient cases the first day and six the second,” Williams said. “This was actually pretty remarkable since I did not have an anesthesia machine that worked.”

Williams administered medication intravenously until supplies arrived. By the time the equipment finally reached their compound, Williams and the rest of the surgical team had moved the operating room from the tent dispensary into a nearby building and set up a 20-bed inpatient unit.

“After just three days, almost all of the waiting patients were treated and a great organization developed,” he said.

With a sound infrastructure in place, the team was able to see more than 1,000 patients and perform 39 surgeries by the end of the week.

“Some of the cases we treated included major scalp lacerations, open wounds too large to close, multiple foot injuries, amputations due to gangrene and burn injuries,” Williams said.

During classes on the USU campus, graduate nursing students learn valuable lessons in restoring order in emergency situations, according to Williams.

“The University gave me the foundation for my career and for being able to handle the conditions in Haiti,” he said. “My education and 10 years of experience in the field gave me the assurance I could manage anything that came my way.”



USU alumni deployed to Haiti shortly after a 7.0-magnitude earthquake struck the island of Hispaniola.

Field Exercises

Much of the USU experience happens beyond classroom walls. In fact, some of the most meaningful instruction takes place on real and simulated battlefields that have become an important part of University learning. The Antietam Road March and Operations Kerkesner and Bushmaster are innovative learning platforms that immerse students in combat-like settings. These environments imbue USU students with the confidence to practice good medicine in challenging environments.

Antietam Road March

The Antietam Road March has been a longstanding USU tradition. Started as a way for students to break in their combat boots, the event has become a vital component of the military studies curriculum. Now, USU students navigate the historic Civil War battlefield to experience an important part of their heritage and gain a richer understanding of military medicine throughout history.

The battlefield-turned-classroom, home to the bloodiest single day in American history, is the birthplace of modern combat evacuation. During the fight, physicians pioneered a system of caring for mass casualties and evacuating the wounded. This brought some order to battlefield medicine and shaped the way injured warfighters are managed today.

Knowing the roots of combat casualty care is an important lesson for USU students, according to Air Force Lieutenant Colonel Sheila Robinson, former

Graduate School of Nursing students participate in the Antietam Road March, an important part of USU's military studies curriculum.

Department of Military and Emergency Medicine Military Studies course director. Many graduates have served on the front lines and in other austere



Each student receives the name of an Antietam warrior before the march begins. Here, students are informed of their Civil War soldier's fate.

environments, and University events like the five-mile march across Antietam National Battlefield in Maryland help prepare today's officers for the extraordinary roles they will fulfill.

"We're attempting to give students a sense of not only the strategies used during Antietam, but also how this battle significantly influenced the development of our modern-day medical system," Robinson said. "Hopefully, this experience will encourage USU students to think strategically and resourcefully when they assume leadership positions during times of conflict."



First-year USU students, above and below, must prove their teamwork skills and physical prowess at Operation Kerknesner in Pennsylvania.

Operation Kerknesner

Knowledge gained from University textbooks is not enough to take on the responsibilities of military medicine. Leadership skills are needed to succeed in these environments, and field exercises like Operation Kerknesner teach students valuable lessons in command.

The five-day simulation exercise, at a military training base in Pennsylvania, closely replicates field conditions, right down to the tents that serve as living quarters for first-year medical students.

Amid rugged terrain, students learn to operate effectively under intense and dangerous conditions by developing unique skills, which allow them to take charge and practice medicine in tumultuous environments, including caring for injured servicemembers while under enemy attack. The exercise also offers search-and-rescue training and team-building events.

"For those of us who have had no prior combat experience, getting a taste of tactical movements and combat situations exposes us to what it's really like to serve as military doctors downrange," said Air Force Second Lieutenant Samantha Wang.



Operation Bushmaster

Explosions shatter the silence and thick clouds of smoke fill the night sky. Moments later, harrowing pleas of "wounded" troops pierce the darkness.

This handcrafted war zone is a training ground for nursing and fourth-year medical students and the final examination for the Military and Contingency Medicine course known as Operation Bushmaster.

The five-day test is highly interactive, intense and far different from traditional pencil-and-paper assessments. At Bushmaster, students explain how to triage the combat-injured—and prove they have the skill and judgment to practice military medicine on a mock battlefield under the watchful eyes of USU instructors.

The patients, played by first-year medical students, sustain physical wounds, such as chemical burns and impalements created by University moulage artists, and psychological injuries, ranging from depression to posttraumatic stress disorder. Much of the primary and specialized care occurs at forward operating bases that students built and must secure.

From wound identification to patient evacuation, students are graded in this unique test of skill and character. The ability to perform effectively at Bushmaster is a requirement for graduation, according to Army Lieutenant Colonel Clifford Lutz, assistant professor in the Department of Military and Emergency Medicine.

"Our students shoulder heavier responsibilities than most," Lutz said. "Operation Bushmaster gives them the real-world experience needed to be leaders and healers wherever duty calls. This piece of the curriculum is an important part of what separates USU from other American universities, and our graduates from other health care professionals."



Operation Bushmaster is an intensive five-day test of the military and medical knowledge of fourth-year students.

Research

University researchers are tackling the complicated science of finding innovative solutions to complex psychological wounds. The wars in Iraq and Afghanistan have brought public attention to these military programs, notably the Center for the Study of Traumatic Stress, which is conducting the largest study of mental health among military personnel ever undertaken; the Department of Medical and Clinical Psychology, which is working to reduce suicide rates among servicemembers; the Center for Neuroscience and Regenerative Medicine and the Traumatic Injury Research Program, which are seeking to understand and improve traumatic brain injury and posttraumatic stress disorder. In 2010, "U.S. News & World Report" named the USU School of Medicine's research program one of the best in the nation.

Battle-Ready Technology

Neurological assessment technology typically administered across several hospital departments has recently been condensed into a comprehensive system that fits inside a book bag. This engineering breakthrough is revolutionizing the way behavioral health professionals are exploring neurological disorders around the world.

The ruggedized pieces—a skull cap, projector, amplifier and computer—can be transported anywhere that American troops go. This means clinicians at field stations in Iraq, for example, will have the capability to measure brain activity on battlefields and send this information to specialists at the world's most advanced hospitals—all in real time.

"The Army isn't staying home, and this technology follows patients," said Paul Rapp, Ph.D., one of the key figures in the development of this portable gear and director of USU's Traumatic Injury Research Program. "Our idea was to put everything from neurology and psychiatry into one box."

Assessment and diagnostic tools, individual patient histories, and a fully functional electroencephalogram are part of the integrated system. A common syntax controls all commands to increase the system's usability and flexibility for use beyond combat care.

"The support of civilian medicine in Third World countries is becoming an important role for the Department of Defense," Rapp said. "If we do our jobs properly, this technology will have legs beyond field operations."

However, connecting providers with patients who are thousands of miles apart is just one of the system's advantages. With further research, Rapp believes the new technology, combined with a complex series of algorithms, could predict which head-trauma patients will experience late-onset conditions such as posttraumatic stress disorder and depression.

This capability represents a major advancement in the field. Many individuals with mild traumatic brain injuries often show no signs of distress in the immediate post-injury period, but problems surface months or years later.

Studying the subtle brain synchronization deficiencies during the asymptomatic periods could provide valuable insight into the progression of neurological disorders and help identify "at-risk" patients, said Rapp, whose research is congressionally funded.

"In psychology, the professionals are called in after the catastrophe," he said. "If we can bring quantitative assessment and a predictive capacity to the practice of neurology and psychiatry, perhaps we can begin fixing things before they fall apart."

Research Excellence

The USU School of Medicine's research program was recognized as one of the best in the country, according to a 2010 survey by U.S. News & World Report.

The magazine surveyed 146 programs and evaluated schools on various factors, including peer reviews, student selectivity, faculty resources and level of research activity.

"It is a great honor to be ranked alongside national leaders in research education," said Larry Laughlin, M.D., Ph.D., dean of the medical school. "USU is committed to fostering an environment where research thrives and important discoveries are made."

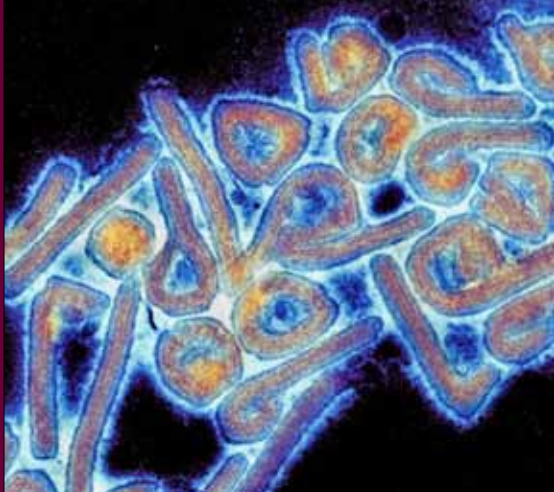
Visionary military and public health-relevant research is at the center of all University investigations. USU is the only institution on the list with such a concentrated mission.



Paul Rapp, Ph.D., director of USU's Traumatic Injury Research Program, standing, tests a new brain monitoring system that can be used on the battlefield. Its durability makes the system ideal for military medics in remote locations, such as Iraq and Afghanistan.



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Researchers are close to a cure for the deadly Ebola virus, photographed by Thomas Geisbert, Ph.D. ('00).

Making Breakthroughs

Developing drug treatments for the Ebola virus has long been considered slow and difficult science. Advancements have been made, but complete protection against the disease has evaded modern medicine—until now.

Thomas Geisbert, Ph.D., a USU ('00) pathology graduate, has accomplished the near impossible. He is close to finding a cure for the emerging disease that causes uncontrollable bleeding and death in almost everyone it infects.

In laboratory studies, Geisbert's specially designed serum containing siRNAs stopped the virus from replicating and allowed the immune system to fight the disease. Each of the protected subjects made a full recovery, and Geisbert made a significant breakthrough.

"We were stunned. I've been working with the virus for my whole career—23 or 24 years—and we've had some mild successes where maybe we could go up to 50 percent protection," he said. "But I was really shocked that we got complete protection."

Geisbert's work is important progress against Ebola, as well as other hemorrhagic diseases such as Marburg, Lassa and Crimean-Congo fever. The same therapy will likely advance recovery for several different infectious diseases because it stops a virus from spreading.

A victory against the Ebola virus and other diseases has not slowed Geisbert's determination. He wants to develop a preventive vaccine and a post-exposure treatment that can be used in humans who may not have access to the antidote immediately following infection.

"We showed complete protection against the Ebola-Zaire virus when we initiated treatment beginning 30 minutes after a high-dose exposure," Geisbert said. "But can we begin treatment at 24 hours or 48 hours after exposure?"

This answer may be the beginning to a final cure and the end to a frightening viral killer.

Innovative Treatments for Prevention of Suicide

Marjan Holloway, Ph.D., assistant professor in the Department of Medical and Clinical Psychology, is working to reduce suicide rates among military populations. This important Army-funded research addresses the rising numbers of servicemembers taking their own lives.

Holloway's clinical research centers on the needs of servicemembers who are hospitalized because of suicide ideation or suicide-attempt behavior. She is developing and empirically testing cognitive behavioral psychotherapy interventions targeted directly at suicide behavior.



Marjan Holloway, Ph.D., is studying ways to reduce suicide rates among servicemembers.

"I take treatments that are considered best practices or evidence-based and adapt them for usage within a military population," she said. Holloway's approach is novel. Presently, a standard scientific approach for the treatment of suicidal individuals does not exist. Holloway hopes to change this. Currently, she and fellow committee members on the Defense Health Board Task Force on the Prevention of Suicide in the Armed Forces are compiling a list of recommendations to address the management of suicide behavior within the Department of Defense.

Holloway is breaking ground on another front as well. The clinical interventions being tested are directly targeting suicide behavior instead of solely treating one or more psychiatric diagnoses. This shift from the traditional paradigm emphasizes a more focused and directive approach to providing care for suicidal individuals.

"The needs of suicidal individuals have been neglected for many years by clinicians and researchers and deserve immediate attention," Holloway said. "We hope that our designed interventions can teach suicidal individuals to no longer consider suicide as the only option."

Addressing the Complexity of Psychological Wounds

Finding innovative solutions to complex psychological wounds is one of the greatest challenges for USU investigators today. Researchers are taking on this complicated science at many University centers, and their findings are driving recovery efforts in new directions. Two USU entities are at the vanguard of such research: the Center for Neuroscience and Regenerative Medicine (CNRM) and the Center for the Study of Traumatic Stress (CSTS).

Traumatic brain injury (TBI) has been called the “signature wound” of the Iraq and Afghanistan wars. Recent data validates the severity of these injuries. More than 1.4 million Americans sustain TBIs annually, and many of these are servicemembers wounded in combat.

Compounding this grim statistic is the frequent onset of posttraumatic stress disorder (PTSD) following a brain-injury diagnosis, especially among troops returning from in-theater operations.

Understanding and improving these conditions is at the core of every pursuit at CNRM. Researchers are

crossing boundaries and disciplines to move discoveries from the center’s laboratories to the patients’ bedside.

Army Colonel Michael Roy, M.D., is one of the center’s investigators exploring novel techniques for combating TBI and PTSD.

He is measuring the brain’s reaction to various emotional stimuli, including

fear and anxiety, through advanced imaging technology at the National Institutes of Health. Understanding how the brain reacts to these emotions may lead to the identification of biological predictors of PTSD—a disorder with behavioral and physiological consequences.

“It is important that we find better ways to address issues such as TBI and PTSD,” Roy said. “We send servicemembers into harm’s way, and they deserve the best treatment available.”

As Roy’s diagnostic and imaging research moves forward, other center investigators are advancing TBI and PTSD treatment in different ways.

Army Colonel Paul Pasquina, M.D. (’91), chief of the Department of Orthopedics and Rehabilitation at the National Naval Medical Center and the Walter Reed Army Medical Center, is part of the CNRM’s rehabilitation and evaluation team.



Army Colonel Paul Pasquina, M.D. (’91), is seeking to better understand the effects of brain injury.

He and a team of clinicians and researchers are trying to better understand the effects of TBI on physical and emotional function, as well as their impact on quality of life. The group is also exploring novel treatment strategies to help promote brain repair in an effort to improve cognitive function.

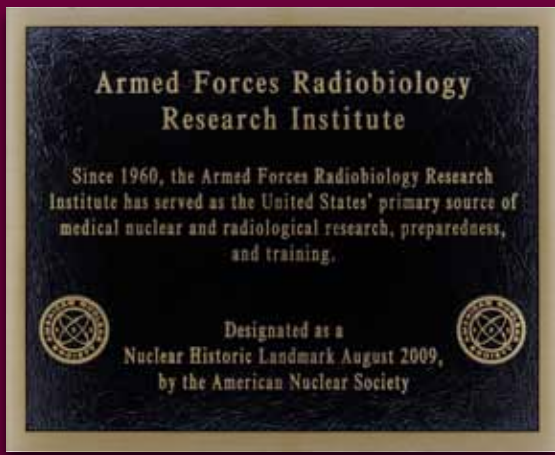
Projects are under way that evaluate the use of computer-based rehabilitation tools, specifically designed to stimulate various domains of cognitive function, such as memory, attention and problem-solving. In addition, advanced tools are being used to evaluate and treat common persistent symptoms of TBI, including dizziness, headache and memory loss.

“It is not uncommon for servicemembers with TBI to also have other significant injuries, such as limb loss, paralysis and vision or hearing impairment,” Pasquina said. “Providing optimal care for these individuals with complex injuries requires the development of creative strategies that employ the expertise of multiple different disciplines.”

His group is working with therapists, engineers and architects to explore innovative options for creating “barrier-free” environments as well as using robotics and assistive technology to enhance independence and community re-integration. They hope by expanding the scope of research beyond traditional medicine and developing new collaborations through the center, novel solutions will be developed to address critical challenges currently facing war casualties and their families.



The Center for Neuroscience and Regenerative Medicine participated in the 2010 Brain Injury Awareness Day on Capitol Hill.



Institute Named Nuclear Historic Landmark

The American Nuclear Society has designated the Armed Forces Radiobiology Research Institute at USU as a historic landmark. The designation memorializes the institute's outstanding accomplishments for nearly five decades.

The groundbreaking science that earned the institute this unique distinction has spanned many disciplines of medicine. In the beginning, the institute focused on understanding the effects of ionizing radiation. Later, its investigations tackled new research areas and crossed into new disciplines, leading to pioneering advancements in understanding the biological effects of nuclear weapons, identifying cancer markers and developing biodosimetry standards and tools.

Next year, the institute will celebrate another achievement—50 years of innovation and discovery. This anniversary will honor the institution's significant contributions to national defense and medical progress.



Army Colonel Donald Hall, deputy director of the Armed Forces Radiobiology Research Institute, and Jack Touhy, executive director of the American Nuclear Society, unveil a bronze plaque designating the institute a nuclear historic landmark.

Understanding Migraine

The common neurovascular disorder called migraine is a very painful type of headache. Migraine sufferers often feel a throbbing pain on one side of their head and experience symptoms such as nausea, vomiting and sensitivity to light or sound.

Traditionally, migraine has been thought of as an episodic, albeit disabling, disorder without any long-term consequences. Ann Scher, Ph.D., associate professor of epidemiology in the Department of Preventive Medicine and Biometrics, is challenging this conventional thinking. She is working to understand the possible relationship between migraine headaches and the development of vascular disease in later life.



Ann Scher, Ph.D., is advancing headache research on many fronts.

Scher is concentrating on the less common "migraine with aura" to determine how the brain is affected by the disorder. The migraine aura is a transient neurological disturbance—usually visual—that acts as a warning signal that a migraine is coming. About one-third of people with migraines experience these neurological symptoms. According to Scher's findings, published in the *Journal of the American Medical Association*, these migraines can be linked to stroke-like lesions in the cerebellum.

"The story of this research is still unfolding," she said. "Through follow-on studies, we are hoping to gain a deeper understanding of how lifetime migraine affects the older brain and the clinical implications, if any, of these lesions."

The research, funded by the U.S. Army and CNRM, is also informing the understanding of traumatic brain injury. Scher is presently examining posttraumatic and post-deployment headache disorders in recently deployed servicemembers. Her investigations aim to identify biomarkers for the diagnosis and prevalence of chronic headache following an injury and determine how posttraumatic headaches differ from "regular" headaches or migraine in terms of symptoms or natural history.

"Headache can really affect troop function. For this reason, the Department of Defense is advancing this research," Scher said. "I am interested in this line of work because migraine is so common, because it can have a dramatic impact on people their entire life, and because the disorder is fascinating in its manifestations. The goal of all of my investigations is to improve the lives of migraine and other chronic headache sufferers."

Center for the Study Of Traumatic Stress

Military personnel often work under stressful circumstances that can affect an entire family. Exposure to traumatic events, such as war, natural disaster and other extreme conditions, leaves indelible impressions on the human psyche.

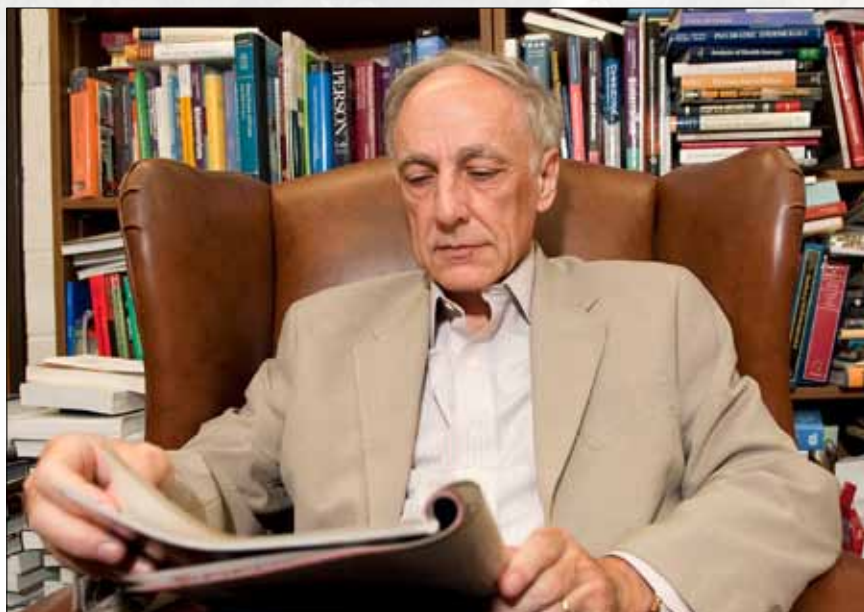
The Center for the Study of Traumatic Stress (CSTS) is one of the USU groups working to improve military resilience by advancing trauma knowledge and care through research, education and consultation.

Although the breadth and depth of CSTS's efforts are vast, much of the current focus is on understanding and preventing the growing suicide rate occurring in the uniformed services. The National Institute of Mental Health awarded a team, led by CSTS, an unprecedented \$50 million to stem the rising numbers of servicemembers taking their own lives.

Robert Ursano, M.D., the center's director and chairman of the USU Department of Psychiatry, is at the helm of this research. He and a team of experts from across the country are looking at suicide from every angle, including the identification of early risk factors.

The research will inform prevention, because "in order to understand suicide, you have to understand what came before it," Ursano said.

The research team is getting a clearer picture of suicide by analyzing existing data and conducting new research. Part of the study includes examining the history of soldiers who have



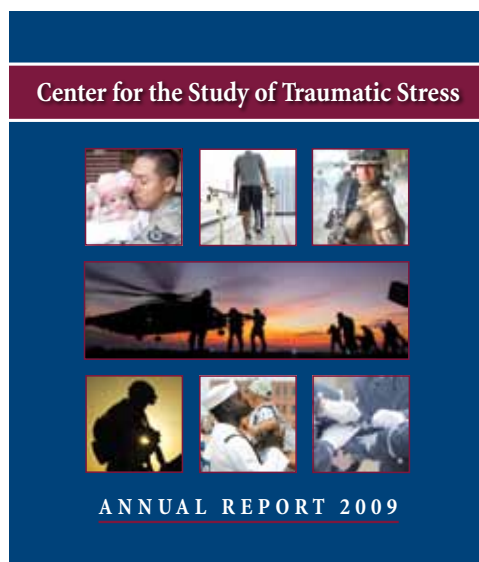
Robert Ursano, M.D., director of the Center for the Study of Traumatic Stress and chairman of the USU Department of Psychiatry, leads the largest study of mental health among military personnel ever undertaken.

committed suicide to identify risk and resilience factors for this tragic outcome. New surveys, which will be administered to active-duty servicemembers and all military recruits entering service in the coming years, will provide information on the prevalence of suicide-related behavior and risk and protective factors.

Information generated from this research will be matched with previously collected data generated from soldiers who attempted or committed suicide to identify demographic similarities between the groups.

All of these strategies aim to find ways to reverse the suicide trend and more wholly care for military families, according to researchers.

"This in-depth study of Army personnel will undoubtedly allow us to better understand the many factors that surround suicide and mental health so we can begin identifying measures to prevent suicide," Ursano said.





John Pesce, Ph.D., deputy head of Vaccines and Medical Countermeasures at the Naval Medical Research Center, offered career advice during Research Week.

Research Week

Faculty and student investigations at USU have led to breakthrough discoveries across the disciplines. This dynamic work is showcased during Research Week, an annual symposium that includes poster presentations, panel discussions and guest speakers.

Celebrating research excellence and developing partnerships are the primary goals of Research Week. Record numbers of investigators from each school and department participated in the 2010 event, making it the largest and most successful Research Week in USU's history.

The 340 projects on display demonstrated USU's special role in civilian, public health and military research initiatives. The highlighted work also captured the diverse interests of University investigators and provided many opportunities for collaboration across traditional boundaries.

"At USU, we encourage people with different backgrounds to talk and think collectively," said Steven Kaminsky, Ph.D., vice president for research. "This type of lateral communication is what really changes fields. In order to move the science forward, we bring our community together through University events like Research Week."

Leonard Shultz, Ph.D., professor at The Jackson Laboratory in Bar Harbor, Maine, presented the Postdoctoral Fellows Lecture.



Fighting Substance Abuse

As in the civilian population, substance abuse and dependence take an enormous toll on military personnel and their families. As part of a broader effort to care for America's fighting force, investigators at USU are conducting research, funded by the National Institutes of Health and the Congressionally-Directed Medical Research Program, to understand, treat and prevent these disorders.

Frances Gabbay, Ph.D., faculty member in the Department of Psychiatry and scientist in the Center for the Study of Traumatic Stress, uses event-related potentials to study individual differences in brain function that may contribute to substance abuse vulnerability and resilience.

Gabbay and her colleagues in the Clinical Psychophysiology and Psychopharmacology Laboratory developed a battery of tasks that invoke cognitive processes implicated in the development of substance abuse. The event-related potentials, recorded while research participants perform these tasks, reflect processes involved in the valuation of rewards and penalties, response to novel or distracting events, and inhibition of pre-potent behavior.

The team seeks to identify aspects of these cognitive processes that differ between groups of individuals at high

and low risk for substance-related disorders. The research could help scientists better understand the pathophysiology of these disorders and ultimately may lead to advancements in treatment and prevention.

According to Gabbay, behavioral therapies may be more effective if individual differences in brain function, such as those her team is studying, are considered.

Further, the research may lead to better pharmacotherapies for addiction. "If we identify an aspect of brain function that is associated with vulnerability, efforts to develop new drug therapies can target neural systems in the brain that are known to support that function," she said.

In addition, Gabbay noted, "Articulating markers of risk for addiction would allow clinicians and military commanders to identify those at risk and intervene before problems arise."



Frances Gabbay, Ph.D., uses advanced electrophysiological techniques to measure the brain's response to various stimuli while research participants perform cognitive tasks.

The Campus Community

The atmosphere is cooperative and collegial as USU students come from all three military services and the Public Health Service. Along with military and civilian faculty and staff, this results in a unique campus community. Military and civilians alike are invited to attend courses offered by the Center for Deployment Psychology, while the Department of Preventive Medicine brings Snakes Alive! for first- and second-year medical students.

At the Head of the Class

Stephen Cozza, M.D., a professor in the Department of Psychiatry and associate director of the Center for the Study of Traumatic Stress, was recently named a “Top Doctor” in Washingtonian magazine’s annual survey.

The award is the result of more than 1,000 peer reviews completed by local physicians. Professionals from across the national capital

region were asked various questions, including who they would recommend if a family member needed medical assistance.

Cozza was selected in both the adult and pediatric psychiatry categories.

“It’s a tremendous honor to be recognized by others in the medical field,” he said. “Serving military families is important work, and I’m proud these efforts are being highlighted in the community.”

Among those efforts is the recent launch of the “Courage to Care, Courage to Talk” campaign.

The hospital-based program was designed to reverse

the negative effects that deployments can have on military families by jump-starting effective communication in the hospital and at home. Providers and family members are given literature and other resources that help facilitate meaningful dialogue about war injuries.

“Research tells us that military children and families are generally strong and resilient. We also know that military families and communities face challenges their civilian counterparts do not,” Cozza said. “Our goal with Courage to Care, Courage to Talk was not to create additional work for medical professionals and care teams, but to offer a resource that families would find useful.”



Each year, Washingtonian magazine publishes a list of the area’s “Top Doctors.” Stephen Cozza, M.D., was named one of the Washington, D.C. area’s best in the adult and pediatric psychiatry categories. Cozza is a professor in the USU Department of Psychiatry and associate director of the Center for the Study of Traumatic Stress.

Alumni Celebrate Strength Of Troops Through Art

Artwork by several USU graduates was featured in a public display called “Wounded in Action: An Art Exhibition of Orthopaedic Advancements.” The showcase, sponsored by the Academy of Orthopaedic Surgeons, celebrated the strength and spirit of injured troops, wounded civilians and their families, as well as the commitment of the orthopedic surgeons who assist them on their journey to recovery.

Army Lieutenant Colonel Anthony Beardmore (’95), Army Colonel James Ficke (’87), Navy Commander and USU Commandant Patricia McKay (’93) and Air Force Colonel Damian Rispoli (’92) were among University graduates contributing original pieces to the Capitol Hill exhibit.

“The artwork captures memorable moments or feelings that can be difficult or impossible to express with words,” McKay said. “Seeing the exhibit and reading the artists’ stories helped to put the experience of war into a broader context and has enhanced my understanding of the perspective of others who have felt the profound impact of war.”



“Things That We Carry,” by Air Force Colonel Damian Rispoli, M.D. (’92), was awarded a Best of Show, Orthopaedic Surgeon ribbon during an art exhibit on Capitol Hill.



Snake expert Bruce Shwedick demonstrates the proper way to hold a boa.

The Living Classroom

The Department of Preventive Medicine brings classroom lessons to life with the Snakes Alive! program. Anacondas, rattlesnakes, cobras and many other dangerous serpents visit the University each year, accompanied by snake expert Bruce Shwedick.

Shwedick and these slithering creatures give first- and second-year medical students valuable information about a unique aspect of health care.

Poisonous snakes are found in the same remote locations as deployed U.S. troops and can pose a threat to fighting forces. The saw-scaled viper, for example, is found in the hillside terrain of Iraq. The creatures can harm military members and therefore are important case studies for future USU physicians and nurses.

"Caregivers will need to be medical investigators," Shwedick said. "Based on the symptoms, they will have to treat their patients accurately."

Commencement

Commencement, a time for celebration at USU, is the culmination of years of education and training that place University graduates among the skilled professional cadre leading the way in military medicine.

Before taking on their responsibilities, each is reminded of the important duties that lay before them. General James Amos, then-assistant commandant, now commandant, of the United States Marine Corps, helped sharpen each graduate's focus on the mission while delivering the 2010 commencement address.



More than 200 individuals completed the transition from medical and nursing students to uniformed officers in the United States Army, Navy, Air Force and Public Health Service.

"Your role as caregivers in our military health system demonstrates your commitment to serve," he said. "That commitment includes a willingness and ability to take on what I consider to be an almost biblical responsibility.

"Providing exceptional clinical medicine is only part of your responsibility," Amos continued. "You are a sense of hope for our servicemembers and their families."



General James Amos, then-assistant commandant and now commandant of the United States Marine Corps, addressed students and guests during the 2010 USU commencement.

The Campus Community

Center for Deployment Psychology

USU's Center for Deployment Psychology is shaping the way professionals care for wounded servicemembers by teaching providers the most current approaches in medicine and evidence-based science. These methods help ensure the fighting force receives exceptional mental health care.

Experts from the center discuss a broad range of topics at its training sites, with much of the coursework converging on identifying and healing the deployment-related psychological wounds common among military families.

The center's internationally recognized experts explore posttraumatic stress disorder, depression, brain injuries and other complex wounds through innovative teaching methods. The instructors share

their knowledge to advance contemporary triage procedures and engage students in experiential activities designed to hone provider-patient dynamics.

Course content is also tailored to meet the needs of civilian caregivers who attend the training sessions. Many mental health care providers in more traditional hospital settings have little exposure to military culture and benefit from a broader education, said David Riggs, Ph.D., the center's executive director. Attendees receive instruction about life in uniform to more fully understand the patients they treat.

"Part of our goal at the center is to improve the way providers help people feel better. The other part of our goal is to keep the military functioning at a high level through healthy troops," Riggs said. "Deployment-related injuries affect more than just individual servicemembers, and that is something we try to convey to every course participant."

USU Featured in 'Maryland Life'

USU's one-of-a-kind academic program was the focus of a story appearing in "Maryland Life" magazine. The article, featured in the March/April 2010 issue, followed students on their journey into military medicine—from the simulated battlefields where students learn the methods of combat care (below) to the unique roles that university alumni take on following graduation from the nation's only federal school of medicine and graduate nursing.



David Riggs, Ph.D., executive director of the Center for Deployment Psychology, is an internationally recognized expert on trauma care. He teaches military and civilian mental health care providers how to identify and treat deployment-related injuries.





Army Major David Cabrera, Ph.D., left, one of the caregivers at the University Counseling Center, offers services to ensure military students, faculty, staff and their families stay healthy in mind and spirit.

University Counseling Center

Maintaining a positive learning environment begins with a healthy student body. To that end, USU provides a comprehensive array of care at the University Counseling Center.

Clinicians at the center practice evidence-based care when treating behavioral health concerns such as anxiety, depression and relationship difficulties. This framework gives patients the resources to work through challenging problems.

"It takes a lot of courage to ask for help," said Public Health Service Lieutenant Jeffrey Goodie, Ph.D., a clinical health psychologist at the center. "Treatment can be a powerful tool, and one that allows our students to maintain healthy lifestyles so they are able to keep their focus on academics."

Goodie and others on the counseling team share space with medical officers in the University Family Health Center. This collocation integrates the once separate fields of mental health and primary care, and gives students easy access to a diverse group of health professionals.

Bridging these fields is an important evolution for health care, according to the counseling center's staff. "This collaborative model is more effective and less stigmatizing for those seeking help," said Charles Privitera, M.D., director of University Counseling Services.

Further, the close proximity of professionals from each practice gives staff members increased opportunities to more fully address the spectrum of patient wellness.

Reaching Greater Heights

Spring break was a welcome departure from the rigors of medical school for Army Second Lieutenants James Winegarner and Michael Chamberlin, who faced a different kind of challenge as they set their sights high—very high—on accomplishing another significant goal.

The duo traveled halfway around the world to conquer Mount Kilimanjaro—the tallest freestanding mountain in Africa. One week after their ascent began, and nearly 20,000 feet later, the USU students claimed victory at the summit of Uhuru Peak.

"This climb was, at least in my mind, a capstone event and symbolic of medical school itself," Winegarner said. "It was seven very difficult days of nonstop physical exertion with the added effects of altitude and cold weather. The feelings we had when we reached the summit were very similar to how we felt [later] walking across the stage at graduation."



Army Second Lieutenants James Winegarner, left, and Michael Chamberlin, both fourth-year medical students, traveled to Tanzania to climb Mount Kilimanjaro.

The Future

Universities across the nation are sounding calls for education reform and USU is no exception. Faculty members from the medical and nursing schools are developing innovative methods that enhance the student experience while unlocking the mysteries of medicine.

These efforts will poise University graduates to take on new health challenges in a rapidly changing world, while maintaining the trademark military focus that has made USU indispensable for three decades.

The School of Medicine: Curriculum Reform

Early in the 20th century, teacher Abraham Flexner inspired a movement that reformed medical education in the United States. His model became the paradigm at universities across the nation. This scholarship, although revolutionary at the time, has remained static over the years, even as medicine and society changed.

A century later, Flexner's ideas are undergoing a dramatic evolution at USU, where the medical school is joining its peers in finding better teaching methods in a modern era.

A group of faculty committees, led by Alison O'Brien, Ph.D., chair of the Department of Microbiology and Immunology, and Louis Pangaro, M.D., chair of the Department of Medicine, is overhauling USU's complex program. The panels are finding ways to incorporate new objectives and improve existing learning standards, while cultivating the skilled doctors needed in military medicine.

"We are developing a structure that gives our students a deeper understanding of the mechanisms that underpin basic science," O'Brien said. "This support will create a richer, more meaningful experience and foster better thinkers and evaluators among our student body."

The new program departs from compartmentalized educational frameworks in which departments design their curricula independent from one another. Instead, it creates a closer link between the basic and clinical sciences throughout all four years. Students will learn about sciences that form the foundation of medicine, primarily through case studies of human body systems and sustained clinical experiences beginning in the early years of medical school.

"Keeping students away from real responsibilities for patients for their first two years is old-fashioned," Pangaro said. "We'd like our students to begin their clerkships halfway through the second year in order to give them real experiences earlier on."

Furthermore, O'Brien and Pangaro believe that increasing students' exposure to patients in hospital settings will help aspiring physicians develop a deeper commitment to patients. Through an emphasis on the importance of humanism in medicine, the reform leaders are building effective communication techniques into the revised curriculum.



Louis Pangaro, M.D., and Alison O'Brien, Ph.D., are leading USU's curriculum-reform effort.

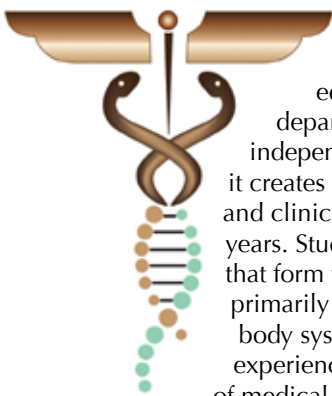
Continued self-education is equally important, they said. The updated program will include a senior thesis demonstrating each student's ability to thrive in places beyond campus.

"We all want our physicians to be lifelong learners," Pangaro said. "They must be able to raise important questions and find solutions on their own."

The five-year reform process will result in a program with many changes, but O'Brien and Pangaro insist that benchmarks and traditions will persist. Future graduating physicians will continue to have the same unique military training. This important part of the USU legacy will be central to the newly adopted program, they said.

"USU is military medicine, and we want to continue attracting the best students," Pangaro said. "Staying on the cutting edge of education is a most effective way to do this."

Molecules To Military Medicine



Graduate School of Nursing: Raising the Bar

Nurses have played an important role in U.S. military operations from the birth of our country. Today, more is expected from advanced practice nurses in military and civilian settings alike. Their knowledge and responsibilities have been amplified in important ways.

In recognition of these expanding roles, the American Association of Colleges of Nursing member institutions voted to increase the level of preparation necessary for advanced nursing practice from the master's degree to the doctorate level by the year 2015.

To meet this goal, USU is working to convert its four master's programs into a Doctor of Nursing Practice degree. This reconstruction will place the University's future graduates among the most highly educated professionals in the field.

"We are raising our educational standards because health care is becoming increasingly complex," said Diane Padden, Ph.D., assistant professor and chair of the Doctor of Nursing Practice Task Force at USU. "The ability to find innovative solutions to challenging problems begins with proper education and training."



A panel of Graduate School of Nursing leaders is working to convert its four master's programs into a Doctor of Nursing Practice degree.

Translating research into evidence-based practice is at the heart of the new curriculum. Adapting innovative methodologies for use in all areas of care promotes better patient outcomes and develops the professional leadership needed to catalyze positive change.

"It's not enough to be an expert clinician at the individual level," Padden said. "Our graduates must be able to look at entire systems and find ways to improve models of care."

The inclusion of a capstone project is the benchmark of the new program. This project will demonstrate the students' ability to bring research from bench to bedside, evaluate practice, and improve health care and patient outcomes.

"Our graduates will be among the leaders in military health care," Padden said. "This new academic credential more accurately reflects their ability to make important differences in the military health care system."

Postgraduate Dental College

The University entered a new frontier in education with the 2010 opening of a Postgraduate Dental College. This expansion adds an important dimension to the University's architecture and gives military medicine a new team of USU experts.

The college, which offers a full range of postgraduate dental education, has Navy and Air Force schools that focus on providing education to health care practitioners who deliver specialized dental medicine.

The Navy-sponsored school is the most expansive, offering master's degree programs in comprehensive dentistry, periodontics, prosthodontics, endodontics and orofacial pain.

"These programs allow our dentists to demonstrate their advanced skill level and provide patients the very best care," said Navy Captain Robert Taft, D.D.S., M.S., dean of the Naval Postgraduate Dental School.

The Air Force-sponsored school offers one master's degree in comprehensive dentistry. Although more narrowly focused, the program has a strong growth potential under the USU banner.

(continued on page 24)



Navy Captain Robert Taft, D.D.S., M.S., discusses patient treatment with Lieutenant Laleh Abdolazadeh of the National Naval Medical Center.

The Future

“We are excited about this new partnership and thrilled at the opportunity to expand our curriculum and possibly grow,” said Air Force Colonel Thomas Schneid, D.M.D., M.S., dean of the Air Force Postgraduate Dental School.

The Navy and Air Force matriculated the first class of USU officers this year at satellite campuses at the National Naval Medical Center in Bethesda, Md., and Wilford Hall Medical Center in San Antonio, respectively.

The learning experiences at both sites are singular—each school harnesses the special needs of its parent service—but all programs share important similarities that follow USU traditions of excellence. For example, students at both schools are taught unique tenets of military dentistry, which allows them to practice advanced procedures in a broad range of settings.

For several students, the University’s dynamic training means deploying on a humanitarian mission and providing oral care to people in need. Practicing in foreign countries under challenging conditions is commonplace for military dentists, said the deans of both schools. Therefore, readiness training is an important part of the program.

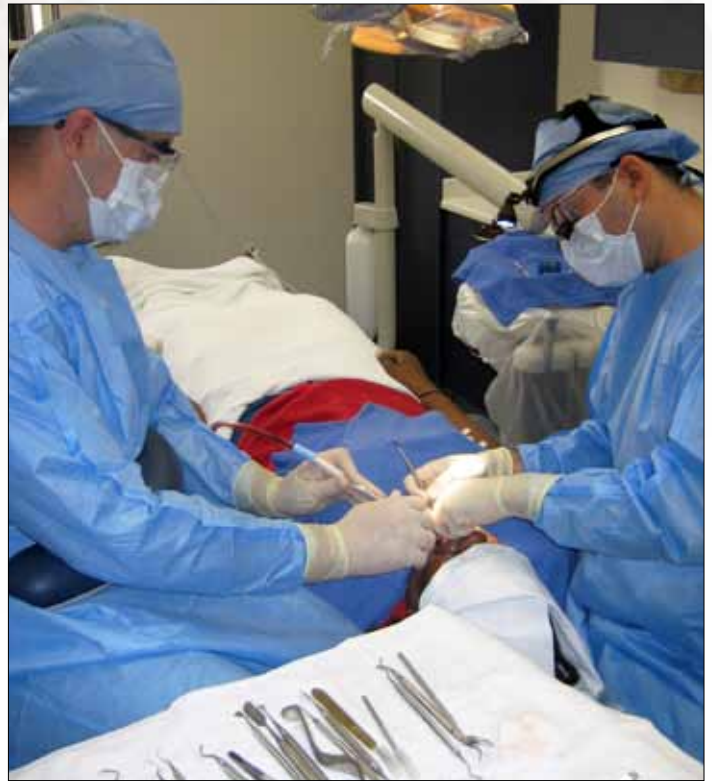
“Our students experience learning opportunities that don’t exist in civilian universities,” Schneid said. “These pieces of the curriculum provide the knowledge and skills to practice in any military environment.”

The sentiment resonates with Taft as well. The Navy’s military-centric programs engage students in distinct ways beyond academics alone.

“Our programs teach the leadership aspects of military life. Our students will not progress unless they are class-one ready,” he said.

Advancing the science of dental medicine is another requirement for graduation. The deans believe learning and discovery go hand-in-hand and foster a collegial environment where research thrives.

Navy and Air Force faculty and students support creative breakthroughs in many specialty areas, completing laboratory and clinical studies on



Clinical work is an important educational component for Postgraduate Dental College students.

bonding agents, composites, regeneration therapy and sleep apnea.

“Understanding the research process is not enough. Students must also contribute to the body of scientific knowledge,” said Air Force Colonel Kraig Vandewalle, D.D.S., M.S., director of dental research at the Air Force Postgraduate Dental School.

These investigations offer the promise of innovation in a new field while expanding the University’s presence in research and practice disciplines that benefit servicemembers in profound ways.

“Dental medicine is an important part of military medicine,” said Charles Rice, M.D., president of USU. “Our new programs create a more complete dedication to overall health and wellness for servicemembers today and tomorrow.”

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Located on the grounds of the National Naval Medical Center and across from the National Institutes of Health in Bethesda, Md., USU is the nation's federal school of medicine and graduate school of nursing.

The University educates health care professionals dedicated to career service in the Department of Defense and the United States Public Health Service. Medical students are active-duty uniformed officers in the Army, Navy, Air Force and Public Health Service who are being educated to deal with wartime casualties, natural disasters, emerging infectious diseases and other public health emergencies.

Of the University's more than 4,700 physician alumni and more than 470 advanced practice nurses, the vast majority serve on active duty and are supporting operations in Iraq, Afghanistan and elsewhere, offering their leadership and expertise.

The University also offers graduate programs in biomedical sciences and public health that are open to civilian and military applicants. The programs are committed to excellence in didactic and research training. The University has awarded more than 1,000 doctoral and master's degrees to date.



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